

Table 2: Hess' Cognitive Rigor Matrix with Curricular Examples: Applying Webb's Depth-of-Knowledge Levels to Bloom's Cognitive Process Dimensions

Bloom's Revised Taxonomy of Cognitive Process Dimensions	Webb's Depth-of-Knowledge (DOK) Levels			
	Level 1 Recall & Reproduction	Level 2 Skills & Concepts	Level 3 Strategic Thinking/ Reasoning	Level 4 Extended Thinking
Remember Retrieve knowledge from long-term memory, recognize, recall, locate, identify	<ul style="list-style-type: none"> ○ Recall, recognize, or locate basic facts, ideas, principles ○ Recall or identify conversions: between representations, numbers, or units of measure ○ Identify facts/details in texts 	<ul style="list-style-type: none"> ○ Compose & decompose numbers ○ Evaluate an expression ○ Locate points (grid/, number line) ○ Represent math relationships in words, pictures, or symbols ○ Write simple sentences ○ Select appropriate word for intended meaning ○ Describe/explain how or why 	<ul style="list-style-type: none"> ○ Specify and explain relationships ○ Give non-examples/examples ○ Make and record observations ○ Take notes; organize ideas/data ○ Summarize results, concepts, ideas ○ Make basic inferences or logical predictions from data or texts ○ Identify main ideas or accurate generalizations ○ Identify themes 	<ul style="list-style-type: none"> ○ Explain, generalize, or connect ideas using supporting evidence ○ Explain thinking when more than one response is possible ○ Explain phenomena in terms of concepts ○ Write full composition to meet specific purpose ○ Select or devise an approach among many alternatives to solve a novel problem ○ Conduct a project that specifies a problem, identifies solution paths, solves the problem, and reports results ○ Illustrate how multiple themes (historical, geographic, social) may be interrelated
Understand Construct meaning, clarify, paraphrase, represent, translate, illustrate, give examples, classify, categorize, summarize, generalize, infer a logical conclusion (such as from examples given), predict, compare/contrast, match like ideas, explain, construct models	<ul style="list-style-type: none"> ○ Construct meaning, clarify, paraphrase, represent, translate, illustrate, give examples, classify, categorize, summarize, generalize, infer a logical conclusion (such as from examples given), predict, compare/contrast, match like ideas, explain, construct models 	<ul style="list-style-type: none"> ○ Solve a one-step problem ○ Calculate, measure, apply a rule ○ Apply an algorithm or formula (area, perimeter, etc.) ○ Represent in words or diagrams a concept or relationship ○ Apply rules or use resources to edit spelling, grammar, punctuation, conventions ○ Follow simpler/routine procedure (recipe-type directions) ○ Solve routine problem applying multiple concepts or decision points ○ Retrieve information from a table, graph, or figure and use it solve a problem requiring multiple steps ○ Use models to represent concepts organization, text structure, and signal words ○ Retrieve information from a table or graph to answer a question ○ Identify or locate specific information contained in maps, charts, tables, graphs, or diagrams 	<ul style="list-style-type: none"> ○ Select a procedure according to task needed and perform it ○ Solve routine problem applying multiple concepts or decision points ○ Retrieve information from a table, graph, or figure and use it solve a problem requiring multiple steps ○ Use models to represent concepts organization, text structure, and signal words ○ Categorize, classify materials ○ Compare/ contrast figures or data ○ Select appropriate display data ○ Organize or interpret (simple) data ○ Extend a pattern ○ Identify use of literary devices ○ Identify text structure of paragraph ○ Distinguish: relevant-irrelevant information, fact/opinion 	<ul style="list-style-type: none"> ○ Use concepts to solve non-routine problems ○ Design investigation for a specific purpose or research question ○ Conduct a designed investigation ○ Apply concepts to solve non-routine problems ○ Use reasoning, planning, and evidence ○ Revise final draft for meaning or progression of ideas ○ Compare information within or across data sets or texts ○ Analyze and draw conclusions from more complex data ○ Generalize a pattern ○ Organize/interpret data: complex graph ○ Analyze author's craft, viewpoint, or potential bias ○ Cite evidence and develop a logical argument for concepts ○ Describe, compare, and contrast solution methods ○ Verify reasonableness of results ○ Justify conclusions made ○ Synthesize information within one source or text ○ Generate conjectures or hypotheses based on observations or prior knowledge
Evaluate Make judgments based on criteria, check, detect inconsistencies or fallacies, judge, critique	<ul style="list-style-type: none"> ○ Reorganize elements into new patterns/structures, generate, hypothesize, design, plan, construct, produce 	<ul style="list-style-type: none"> ○ Brainstorm ideas, concepts, or perspectives related to a topic or concept 	<ul style="list-style-type: none"> ○ Gather, analyze, and organize information ○ Analyze discourse styles ○ Gather, analyze, & evaluate relevancy & accuracy ○ Draw & justify conclusions ○ Apply understanding in a novel way; provide argument or justification for the application ○ Synthesize information across multiple sources or texts ○ Design a model to inform and solve a real-world, complex, or abstract situation 	<ul style="list-style-type: none"> ○ Develop generalizations of the results obtained or strategies used and apply them to new problem situations
Create Reorganize elements into new patterns/structures, generate, hypothesize, design, plan, construct, produce	<ul style="list-style-type: none"> ○ Brainstorm ideas, concepts, or perspectives related to a topic or concept 	<ul style="list-style-type: none"> ○ Generate conjectures or hypotheses based on observations or prior knowledge 	<ul style="list-style-type: none"> ○ Formulate an original problem, given a situation ○ Develop a complex model for a given situation 	<ul style="list-style-type: none"> ○ Design a model to inform and solve a real-world, complex, or abstract situation

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Implementing assessments

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